

8. (Amended) A spacer according to claim 1, wherein said slits are substantially parallel to said tube axis.

9. (Amended) A spacer according to claim 1, wherein said slits are not parallel to said tube axis.

10. (Amended) A spacer according to claim 1, wherein said slits are arranged in pairs of same length.

11. (Amended) A spacer according to claim 1, wherein said slits are arranged in pairs of different lengths.

12. (Amended) A spacer according to claim 1, wherein slits associated with one extension axially overlap slits associated with a second, axially displaced, extension.

13. (Amended) A spacer according to claim 1, wherein said proximal end of said tube defines a proximal end-cap, which end-cap extends outside of a volume defined by the geometry of said extended extensions.

14. (Amended) A spacer according to claim 1, wherein said distal end of said tube defines a distal end-cap, which end-cap extends outside of a volume defined by the geometry of said extended extensions.

17. (Amended) A spacer according to claim 1, comprising at least one spur axially extending from said spacer, to engage tissue adjacent said spacer.

19. (Amended) A spacer according to claim 1, comprising an inner bolt.

22. (Amended) A spacer according to claim 19, wherein said bolt has a base, which base has an external diameter greater than an inner diameter of said tube, such that said base restricts axial motion of tube in one direction relative to the bolt.

AS 23. (Amended) A spacer according to claim 19, wherein said bolt has a head, which head locks against at least one end of said tube, to prevent axial expansion of said tube.

AL 27. (Amended) A spacer according to claim 19, wherein said bolt is adapted to engage a pole element for holding said bolt during deployment of said spacer.

AM 30. (Amended) A spacer according to claim 1, wherein said spacer comprises a plurality of segments, each segment defining one or more extensions that extend from said spacer.

AB 33. (Amended) A spacer according to claim 1, wherein an extension direction of at least one of said at least two extensions is normal to said tube.

34. (Amended) A spacer according to claim 1, wherein an extension direction of at least one of said at least two extensions defines a sharp angle with said tube axis, in a plane containing said tube axis.

35. (Amended) A spacer according to claim 1, wherein at least one of said at least two extensions does not extend along a direction perpendicular to said tube.

36. (Amended) A spacer according to claim 1, wherein at least one of said at least two extensions has, in a plane containing said tube axis, a profile of a triangle, with the tip pointed away from said tube.

37. (Amended) A spacer according to claim 1, wherein at least one of said at least two extensions has, in a plane containing said tube axis, a curved profile.

38. (Amended) A spacer according to claim 1, wherein at least one of said at least two extensions has, in a plane containing said tube axis, a profile that narrows and then widens, along a direction away from the tube.

39. (Amended) A spacer according to claim 1, wherein at least one of said at least two extensions has, in a plane perpendicular to said tube axis, a profile that narrows, along a direction away from the tube.

40. (Amended) A spacer according to claim 1, wherein at least one of said at least two extensions has, in a plane perpendicular to said tube axis, a profile that narrows and then widens, along a direction away from the tube.

41. (Amended) A spacer according to claim 1, wherein at least one of said at least two extensions has, in a plane perpendicular to said tube axis, a uniform profile.

42. (Amended) A spacer according to claim 1, wherein at least one of said at least two extensions has, a pointed top profile.

43. (Amended) A spacer according to claim 1, wherein at least one of said at least two extensions has, a top profile substantially the same size as a base of said extension.

44. (Amended) A spacer according to claim 1, wherein at least one of said at least two extensions has, a top profile substantially the larger than a base of said extension.

45. (Amended) A spacer according to claim 1, wherein said extensions are unevenly distributed along said axis.

46. (Amended) A spacer according to claim 1, wherein said extensions are evenly distributed along said axis.

47. (Amended) A spacer according to claim 1, wherein said extensions are unevenly distributed along a circumference of said tube.

48. (Amended) A spacer according to claim 1, wherein said extensions are evenly distributed along a circumference of said tube.

49. (Amended) A spacer according to claim 1, wherein said different ones of said extensions have different geometries.

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50. (Amended) A spacer according to claim 1, wherein said extensions are distributed in a spiral pattern.

51. (Amended) A spacer according to claim 1, wherein said tube axis is coaxial with an axis of said expanded geometry.

52. (Amended) A spacer according to claim 1, wherein said tube axis is parallel to an axis of said expanded geometry.

53. (Amended) A spacer according to claim 1, wherein said tube axis is not-parallel to an axis of said expanded geometry.

54. (Amended) A spacer according to claim 1, wherein said spacer has an expanded geometry cross-section of a circle.

55. (Amended) A spacer according to claim 1, wherein said spacer has an expanded geometry cross-section of a rectangle.

56. (Amended) A spacer according to claim 1, wherein a cross-section of said expanded geometry varies along an axis of said expanded geometry.

57. (Amended) A spacer according to claim 1, wherein a cross-section diameter of said expanded geometry varies along an axis of said expanded geometry.

58. (Amended) A spacer according to claim 1, wherein a cross-section diameter of said tube varies along an axis of said tube.

59. (Amended) A spacer according to claim 1, wherein a cross-section of said tube varies along an axis of said tube.

60. (Amended) A spacer according to claim 1, wherein said tube has a circular cross-section.

61. (Amended) A spacer according to claim 1, wherein said tube has an elliptical cross-section.

BS  
Q10  
64. (Amended) A spacer according to claim 1, wherein said tube has a rectangular cross-section.

65. (Amended) A spacer according to claim 1, wherein said tube axis is bent, when the spacer is unexpanded.

66. (Amended) A spacer according to claim 1, wherein said tube axis is straight when the spacer is unexpanded.

67. (Amended) A spacer according to claim 1, wherein said tube axis is bent when the spacer is expanded.

68. (Amended) A spacer according to claim 1, wherein said tube axis is straight when the spacer is expanded.

69. (Amended) A spacer according to claim 1, comprising a ratchet mechanism to maintain said spacer in an expanded configuration.

70. (Amended) A spacer according to claim 1, comprising at least one portion of said spacer that prevents axial contraction of said spacer.

Q11  
73. (Amended) A spacer according to claim 1, comprising at least protrusion on at least one of said extensions, to prevent collapsing of said extension.

74. (Amended) A spacer according to claim 1, comprising at least protrusion on at least one of said extensions, to interlock said two extensions.

75. (Amended) A spacer according to claim 1, comprising at least one interconnecting element for interconnecting said extensions when the extensions are expanded.

Q12  
78. (Amended) A spacer according to claim 1, wherein at least one of said extensions comprises only bending joints.

79. (Amended) A spacer according to claim 1, wherein at least one of said extensions comprises at least one twisting joint.

80. (Amended) A spacer according to claim 1, wherein at least one of said extensions comprises a lift-up-extension in which a significant axial section of the tube is lifted away from said tube to form said expanded geometry.

81. (Amended) A spacer according to claim 1, wherein at least one of said extensions comprises at least two legs that are coupled by a extension top.

82. (Amended) A spacer according to claim 1, wherein at least one of said extensions comprises at least three legs that are coupled by a extension top.

83. (Amended) A spacer according to claim 1, wherein at least one of said extensions comprises at least four legs that are coupled by a extension top.

84. (Amended) A spacer according to claim 1, wherein at least one of said extensions comprises at least two legs, which legs are aligned with the tube axis.

85. (Amended) A spacer according to claim 1, wherein a plurality of annealed locations are provided on said spacer to assist in expansion of said spacer.

86. (Amended) A spacer according to claim 1, wherein a plurality of etched locations are provided on said spacer to assist in expansion of said spacer.

87. (Amended) A spacer according to claim 1, wherein a plurality of holes are provided on said spacer to assist in expansion of said spacer.

89. (Amended) A spacer according to claim 1, wherein said spacer is annealed as a unit.

90. (Amended) A spacer according to claim 1, wherein said spacer comprises means for changing the axial length of the spacer over time, after the spacer is implanted.

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- AB
- 0904202206860
91. (Amended) A spacer according to claim 1, wherein said spacer is formed of metal.
92. (Amended) A spacer according to claim 1, wherein said spacer is formed of plastic.
93. (Amended) A spacer according to claim 1, wherein said spacer is formed of a combination of distinct zones of different materials.
94. (Amended) A spacer according to claim 1, wherein said spacer comprises an elastic material, which is elastically deformed by the extension deformation.
95. (Amended) A spacer according to claim 1, wherein said spacer comprises a plastic material, which is plastically deformed by the extension deformation.
96. (Amended) A spacer according to claim 1, wherein said spacer comprises a super-elastic material, which is super-elastically deformed by the extension deformation.
97. (Amended) A spacer according to claim 1, wherein said spacer comprises a shape-memory material.
98. (Amended) A spacer according to claim 1, wherein said spacer is adapted to be axially deformed under axial pressures of over 20 Kg.
99. (Amended) A spacer according to claim 1, wherein said spacer is adapted to be axially deformed under axial pressures of over 30 Kg.
100. (Amended) A spacer according to claim 1, wherein said spacer is adapted to be axially deformed under axial pressures of over 50 Kg.
101. (Amended) A spacer according to claim 1, wherein said spacer is adapted to be axially deformed under axial pressures of over 70 Kg.
102. (Amended) A spacer according to claim 1, wherein said spacer is adapted to be axially deformed under axial pressures of over 90 Kg.

103. (Amended) A spacer according to claim 1, wherein said spacer is adapted to remain expanded in a vertebra of an active human, when placed with the tube axis perpendicular o a spine of said human.

104. (Amended) A spacer according to claim 1, wherein said tube has a cross-sectional diameter smaller than 2 times the maximal cross-sectional diameter of said expanded geometry.

105. (Amended) A spacer according to claim 1, wherein said tube has a cross-sectional diameter smaller than 4 times the maximal cross-sectional diameter of said expanded geometry.

106. (Amended) A spacer according to claim 1, wherein said expanded geometry is sized to fit between two human vertebrae.

107. (Amended) A spacer according to claim 1, wherein said extensions have tips and wherein said tips has a surface fill factor of at least 20% relative to the contact surface of a target vertebra with the spacer geometry.

108. (Amended) A spacer according to claim 1, wherein said extensions have tips and wherein said tips has a surface fill factor of at least 40% relative to the contact surface of a target vertebra with the spacer geometry.

109. (Amended) A spacer according to claim 1, wherein said extensions have tips that contact a surface of target vertebra and wherein said tips has a surface fill factor of at least 60% relative to the contact surface of the target vertebra with the spacer geometry.

110. (Amended) A spacer according to claim 1, wherein said expanded geometry covers at least 40% of the surface of a target vertebra, previously contacting a disc.

111. (Amended) A spacer according to claim 1, wherein said expanded geometry covers at least 60% of the surface of a target vertebra, previously contacting a disc.



Q13 112. (Amended) A spacer according to claim 1, wherein said expanded geometry covers at least 80% of the surface of a target vertebra, previously contacting a disc.

Q14 116. (Amended) A spacer according to claim 1, wherein said spacer is coated with a bio-active coating.

Q15 119. (Amended) A spacer according to claim 1, wherein said extensions comprises spikes.

RS 120. (Amended) A spacer according to claim 1, wherein an extensions designed to carry greater stress has an increased strength over another extension.

121. (Amended) A spacer according to claim 1, wherein said spacer has an angular orientation.

122. (Amended) A spacer according to claim 1, wherein at least two of said at least two extensions are designated to hold apart two vertebra.

123. (Amended) A spacer according to claim 1, wherein said spacer is lordotic.

124. (Amended) A spacer according to claim 1, wherein at least one of said extensions is adapted to embed in vertebral bone.

#### REMARKS

The present application is a U.S. national application of PCT Application No. PCT/IL00/00058 filed January 27, 2000. The claims in the present application were amended by limiting the number of claims and removing multiple dependencies, to reduce costs and put them in better form for examination in the US.

Applicants wish to bring to the attention of the Examiner that the present amendments are based on claims 1-10 and 108-124 attached to the IPER and claims 11-107 as originally published.

Applicants note that the claims were indicated as meeting the criteria of PCT Article 33(2)-33(4) in the IPER issued by the European Patent Office (acting as IPEA).